

AMENDMENTS TO THE CLAIMS:

Please amend claim 1 and add new claims 34-36 as shown on the following pages. Material inserted is indicated by underlining (insertion) and material deleted is indicated by strike-out (~~deletion~~).

1. (Currently Amended) A method for producing a support for determining analytes, comprising the steps of
 - (a) providing a support comprising at least one ~~closed~~ channel, comprising a conduit having an inlet and an outlet for passing fluid from the inlet to the outlet, in the support body,
 - (b) passing liquid with building blocks for synthesizing polymeric receptors through the channel or channels of the support body,
 - (c) site- and/or time-specifically immobilizing the receptor building blocks in each case on predetermined positions in the channel or channels by illumination and
 - (d) repeating steps (b) and (c) until the required receptors have been synthesized in each case on the predetermined positions.
2. (Original) The method as claimed in claim 1, characterized in that a support which comprises defined areas with, in each case, identical receptor species, is produced.
3. (Previously presented) The method as claimed in claim 1 characterized in that the

channels are arranged on at least one support surface.

4. (Previously presented) The method as claim in claim 1 characterized in that the support comprises a large number of channels which are preferably arranged parallel to one another.
5. (Previously presented) The method as claim in claim 1 characterized in that the receptors are selected from nucleic acids and nucleic acid analogs.
6. (Original) The method as claim in claim 5, characterized in that the receptor building blocks are selected from nucleotides, oligonucleotides, nucleotide analogs and oligonucleotide analogs.
7. (Previously presented) The method as claim in claim 1 characterized in that the receptors are selected from polypeptides.
8. (Original) The method as claimed in claim 7, characterized in that the receptor building blocks are selected from amino acids and peptides.
9. (Previously presented) The method as claimed in claim 1 characterized in that the illumination takes place via a programmable light source matrix.

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10. (Previously presented) The method as claimed in claim 1 characterized in that the pattern of polymeric receptors is determined by computer programming.
11. (Previously presented) The method as claimed in claim 1 characterized in that the support is used for determining analytes in a sample.
12. (Previously presented) A method for integrated synthesis and analyte determination on a support, comprising the steps of:
- (a) providing a support body,
 - (b) passing a liquid with, present therein, receptors or building blocks for synthesizing polymeric receptors over the support,
 - (c) site- or/and time-specifically immobilizing the receptors or receptor building blocks in each case on predetermined positions on the support, the synthesis and analyte determination being carried out in an integrated apparatus, with the synthesis or/and the analyte determination process being monitored and controlled in any number of positions on the support,
 - (d) where appropriate, repeating steps (b) and (c) until the required receptors have been synthesized in each case on the predetermined positions on the support,
 - (e) bringing the support into contact with a sample containing analytes and
 - (f) determining the analytes via their binding to the receptors immobilized on the support.

13. (Original) The method as claimed in claim 12, characterized in that an integrated apparatus comprising a programmable light source matrix, a detector matrix, a support arranged between light source matrix and detector matrix, and means for supplying fluids into the support and for discharging fluids from the support is used.
14. (Previously presented) The method as claimed in claim 12 characterized in that the analyte is removed again from the support after the determination.
15. (Previously presented) The method as claimed in claim 12 characterized in that a plurality of the synthesis/analyte determination cycles is carried out, with the receptors for a subsequent cycle being synthesized on the basis of the information from a preceding cycle.
16. (Original) The method as claimed in claim 15, characterized in that an extension of the receptors from the preceding cycle takes place for the subsequent cycle.
17. (Original) The method as claimed in claim 15, characterized in that a new support with receptors which are modified compared with the preceding cycle is synthesized for the subsequent cycle.

18. (Original) The method as claimed in claim 17, characterized in that the modification of the receptors comprises a change in the sequence or/and an exclusion of negative receptors from the preceding cycle.
19. (Previously presented) The method as claimed in claim 12 characterized in that a planar support is used.
20. (Previously presented) The method as claimed in claim 12 characterized in that a support with a large number of channels is used.
21. (Previously presented) The method as claimed in claim 12 characterized in that a plurality of supports is used for a synthesis/analyte determination cycle.
22. (Original) The method as claimed in claim 21, characterized in that the plurality of supports is synthesized and analyzed in different detection apparatuses between which there are information technology links but which may be spatially separated from one another.
23. (Original) The method as claimed in claim 20, characterized in that a support comprising a large number of channels, a large number of different receptors being immobilized in the channels, is used.

24. (Original) The method as claimed in claim 23, characterized in that the support is optically transparent at least in the region of the reaction regions.
25. (Previously presented) The method as claimed in claim 23 characterized in that a reagent kit comprising the support and building blocks for synthesizing polymeric receptors on the support is employed.
26. (Original) The method as claimed in claim 13, characterized in that the apparatus additionally comprises means for deprotection of reaction components on the support.
27. (Previously presented) The method as claimed in claim 13 characterized in that the apparatus additionally comprises electronic control means.
28. (Previously presented) The use of the method as claimed in claim 1 for the sequencing of nucleic acids.
29. (Original) The use as claimed in claim 28 for new sequencing or/and resequencing of complexed genetic materials such as, for example, individual genomes or synthetic nucleic acids.

30. (Previously presented) The use of the method as claimed in claim 1 for obtaining diagnostic information for individual patient management such as, for example, the individual effect of pharmaceuticals.
31. (Previously presented) The use of the method as claimed in claim 1 for analyzing the effect of pharmacological substances.
32. (Previously presented) The use of the method as claimed in claim 1 for setting up and analyzing substance libraries.
33. (Previously presented) The use of the method as claimed in claim 1 for comparing individuals in a population.
34. (New) The method for producing a support for determining analytes as in claim 1 wherein said at least one channel is a capillary channel.
35. (New) The method for producing a support for determining analytes as in claim 1 wherein each of said channels contains a plurality of said different polymeric receptors.
36. (New) The method for producing a support for determining analytes as in claim 1 wherein each channel provides a three dimensional surface area for synthesis of said polymeric receptors.